

**RFoF 40GHz Transceiver**



**1U Enclosure for RFoF 40GHz**

**Outdoor Enclosure for RFoF 40GHz**



Applications:	Key features:	Options:
Satcom	Frequency Range: 1-40GHz	Various RF Gains, P1dB, Noise Figure by adding amplifier
EW	Best Cost Performance	Electrical interface and dimensions can be tailored per customer request
Radio Telescopes	High SFDR $\geq 107$ dBm	
Distributed Antenna	Communications: RS232	
Telecommunication: <ul style="list-style-type: none"> <li>▪ Antenna Remoting</li> <li>▪ Long RF links via fiber</li> </ul>	Excellent Gain Flatness Excellent Phase Noise	

**RFOptic's** analog RFoF compact modules convert RF signals to optical signals and back. The Tx unit using an optical transmitter converts RF to Optical signal, and the Rx unit converts Optical to RF signal. The two units are connected by the customer's fiber.

RFOptic's RF over Fiber modules (RFoF) are suitable for telecommunications and radar applications. Satellite, Point-to-Point antennas can be connected from several meters to many kilometers away from the control room. Base stations can be connected through fiber to remote sector antennas.

Broadcasters can easily distribute their full RF streams over fiber to remote locations, therefore eliminating the need for complex equipment to be installed in far and hard to reach locations. With our wide-band units, cable operators can centrally locate their broadcasting equipment, and connect the RF through fiber to the remote location, thus reducing significantly the CAPEX and OPEX of their networks.

**Table below describes the typical specifications of the RFoF-40GHz Transceiver.**

Parameter	Unit	Specifications
<b>RF Tx-Rx link</b>		
Frequency Range	GHz	1-40
RF Gain <sup>[1]</sup>	dB	-28
Gain Flatness	dB	≤ ±3.5
Gain Flatness for any 10 GHz bandwidth	dB	≤ ±1.5
1dB Input compression point <sup>[2]</sup>	dBm	14
SFDR (calculated) <sup>[2,3]</sup>	dB/Hz <sup>2/3</sup>	107
Maximum RF input level	dBm	23
VSWR Input	-	2.2:1
VSWR Output	-	2.2:1
Noise Figure <sup>[1,2]</sup>	dB	35
Spurious	dBc	≤ -80
Phase Noise <sup>[4]</sup>	dBc/Hz	≤ -100
Input/Output impedance	Ohm	50
<b>Optical and Electrical and Environmental (Tx, Rx)</b>		
Laser diode operating wavelength	μm	1.55
Receiver Photodiode operating wavelength	μm	1.48 - 1.62
Operating temperature range	°C	0 to 70
Storage Temperature range	°C	-40 to +85
LED status indicators (Tx/Rx)	-	Green
<b>Mechanical (Tx, Rx)</b>		
Dimensions Tx unit	mm	200(L)*150(W)*33(H)
Dimensions Rx unit	mm	150(L)*100(W)*33(H)
RF Input/Output connectors	mm	2.92 (F)
Optical Connector	-	FC/APC
Power Connector	-	DB9
Power	VDC	5
Data Connector	-	DB9

1. Excluding customer's fiber loss.
2. At 35 GHz
3. Excluding in-band harmonics.
4. At 10kHz off set.

### RFoF 40GHz module options:

RFoF 40GHz	Unit	RFoF 40GHz	RFoF 40GHz W/15dB Post-Amp. & Pre-Amp.	RFoF 40GHz w/ 15dB Pre-Amp.
<b>P/N</b>	-	<b>RFoF-40G-Mini</b>	<b>RFoF-40G-Mini-P</b>	<b>RFoF-40G-Mini-Pre</b>
Gain	dB	-28	0	-14
InP1dB [2]	dB	14	0	0
Noise Figure [2]	dB	35	21	21
SFDR [2]	dBc/Hz	107	107	107

Upon request there is option for RFoF 40GHz with 30dB Post Amp (0dB link gain and 14dBm InP1dB)